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ENTOMOLOGICAL NEWS

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Charles Liebeck

CHARLES LIEBECK, long a resident of Philadelphia, died there on February 24, 1947, after a short illness, at the age of 83 years. In his younger days and in middle life, he was a diligent and enthusiastic collector of Coleoptera and he built up a fine representative collection of North American beetles, more than 100,000 specimens in a goodly number of species. The collection is notable for the long series of variant forms of the same species. He was an excellent preparator and any sample box of his collection showed his delicate handling.

He was a skilled mechanic and worked all his life at his trade, that of paper scorer, but devoted his spare time to his collection. About ten years ago he had come to the conclusion that he could not continue the care of his collection and at the same time keep up the necessary work at his trade. Being a man of decision he gave his collection outright to a congenial specialist and fellow worker in the same field, Dr. Henry C. Fall of Tyngsboro, Massachusetts, with whom he had been in frequent correspondence for more than 40 years. On the death of Dr. Fall, on November 14, 1939, with Mr. Liebeck's approval, the entire collection went to the Entomological Department of the Museum of Comparative Zoology of Harvard University, Cambridge, Massachusetts. After parting with his collection, Mr. Liebeck expressed himself repeatedly as well satisfied with his decision.

During the last World War and until more than 80 years of age, he worked in an essential plant full time and much overtime.

Mr. Liebeck never married, making his home at 1633 W. Columbia Avenue, later at 2000 N. Broad Street, Philadelphia, with his sister, Miss Lena Liebeck, who, with two brothers, survives him.

The following incidents in his life were related in a letter to the writer shortly before his death:

"We lived in Morrisania, suburb of New York City, for a number of years prior to the Centennial and there is one specimen or was, in my collection labeled Morrisania, 1874, *Phanaeus cornifex*. I had other insects there. . . .

"Our folks came here [to Philadelphia] in 1876—April of the Centennial year. I spent only one day at the Exhibition, Pennsylvania Day, which I believe was on the 26th of September, as a Grammar School boy, first division, when, with the aid of a white badge, admission was 25 cents instead of the regulation 50 cents. . . . What interested me most was the Colorado building with its exhibit of animals and birds of that state; the Army and Navy Building with the turret of a Monitor in front of the entrance . . . the Main Building where the two cases of mounted birds caught my eye; these I believe belonged to Harvard College. . . .

"I made some trips to Atlantic City, a small place at that time, via the narrow gauge railway, Phila. & Reading; on the first trip I was armed with a round pint bottle partly filled with alcohol and I spent my time along the beach front, collecting such Coleoptera as had somewhere fallen into those streams, which run out into the ocean, and then drifted in. This first trip resulted in a solid pint bottle of beetles, large and small, some of which later proved that some of Dr. Leconte's suppressed species not only did occur there but were entirely valid. . . .

"Like most people of the south end of the city, I used a gun when it was taller than I. I also mounted birds, possibly over 300, before I gave these up for the Coleopters. . . .

"About this time, I became acquainted with G[eorge] B. Cresson, who at that time had a small print[ing] shop on 7th Street below Arch. He came into the shop where I was working at that time, wanting some pamphlet cases made to hold folders of the Henshaw Check List of Coleoptera which he was printing. . . . He had his grandfather's, James Riding's, collection of Coleoptera, the Crotch duplicates and a large assort-

ment of other N[orth] A[merican] duplicates, which I suppose were his grandfather's originally. [He later became the entomological curator at the Academy of Natural Sciences, Philadelphia.] He sent me a card one day: 'I saw Dr. [George H.] Horn last night and if you are willing to pin insects in return for specimens, I think we can give you enough to occupy your leisure moments.' Card is dated 1/5 '86. From that time I became a volunteer worker."

KATHARINE F. RICHMOND.

To the preceding entertaining account by Mrs. Richmond, sister of Dr. Fall, there may be added a few other data concerning Mr. Liebeck.

He was born in New York City, October 26, 1863, son of Barbara and Henry Liebeck. His sister writes: "There has been no one else in the family interested in natural history—the way we understand it he simply took a fancy to collecting and he eventually made a big thing of it." After coming to Philadelphia, as he has related above, he became a frequent visitor and worker at the Academy of Natural Sciences. He was elected a member of the Academy in January, 1892, and of the American Entomological Society on June 13, 1892. At the time of his death he was the senior member of the Society, although he had not been present at a meeting for many years before his death. He served on the Advisory Committee of ENTOMOLOGICAL NEWS from January, 1893, to December, 1941, and during my editorship I not infrequently asked and received his opinion on papers on Coleoptera.

Dr. P. J. Darlington, Jr., Fall Curator of Coleoptera at the Museum of Comparative Zoology, has written: "Mr. Fall spent the last years of his life rearranging his own general collection of North American coleoptera, and during the rearrangement he incorporated into his own collection whatever he needed from the Liebeck collection." The balance of the Liebeck collection—that is, the main part—will be incorporated into the Museum's general collection of North American coleoptera. Each specimen will be labelled with a small label reading, 'Liebeck collec-

tion.' Liebeck's material, as you probably know, was very rich and beautifully prepared."

Mr. Liebeck published very little. We have found a note by him on *Baris scolopacea* Ger. in the NEWS for April, 1893 (Vol. IV, no. 4, page 121).

He took part in several of the joint meetings and collecting excursions of the entomologists of Philadelphia, Newark, Brooklyn and New York at Jamesburg, New Jersey, on the Fourth of July in the 1890's. A photograph of one of these groups with the names below, on July 4, 1894, is reproduced as Plate VII of the NEWS, for September, 1894. It shows Mr. Liebeck seated in the first row, to the right, a good likeness.

PHILIP P. CALVERT.

Reflections on the Subspecies

By MELVILLE H. HATCH, University of Washington, Seattle, Wash.

Species in the biological world, just as in the world of the chemical elements, represent systems of relative dynamic stability. They are separated from one another by discontinuous variation, because of the relative instability of the intermediate states. These discontinuous systems are normally detectable from individual examples, provided the examples are of the proper sex and/or stage of development. Instances to the contrary should be viewed with suspicion as possibly impugning the validity of the alleged species.

During the past half century, it has been discovered that the populations that constitute a species are themselves frequently differentiated in different portions of the species' range. This is the result of one or more mutations occurring in one portion of the range and failing to spread or failing to spread evenly throughout all the populations of the species. Such populations have come to be regarded as geographical races or geographical

subspecies or subspecies. In practice, subspecies are distinguished from species by the fact that they occupy contiguous rather than identical areas and intergrade with each other along the lines of their contiguity.

A great deal of attention has been given to subspecies in vertebrates and, more latterly, in insects. As available specimens have increased in number, their study has become more and more intense, and the sorts of characteristics used for the discrimination of subspecies have become more and more obscure. In many cases purely average differences in color, size, and shape are involved in their separation, with the result that sometimes a subspecific character is applicable only to a population and frequently or not at all to an individual.

At the same time, as authors have become increasingly familiar with subspecies, they have come to regard them in many instances as *the* taxonomic units, with species as more or less vaguely definable groups of subspecies. The result is that the basic taxonomic unit becomes recognizable only on the basis of a series of specimens.

The object of the present note is to deprecate this tendency to emphasize the subspecies and to suggest that we return to the species as the basic unit. Both species and subspecies are populational concepts, but the species can normally be recognized on the basis of a single specimen (of the proper age and/or sex). Every subspecies, on the other hand, at least in certain portions of its range, intergrades with one or more other subspecies, and the assignment of an individual specimen is determined by the general complexion of the population of which it is a member. It thus follows that very nearly indistinguishable specimens may belong to diverse subspecies, depending on the populations from which they come! It follows, further, that no selection of specimens of a subspecies short of an extensive *unselected* series is an adequate representation of it. Merely average examples are obviously inadequate. A selection (or a description) of average, intermediate, and extreme specimens, while more satisfactory, is still not entirely so. Complete adequacy is secured only by a series extensive enough (or by a de-

scription) that shows the relative frequency of the several variants in the different parts of its range. Moreover, collectors and curators should avoid the almost inevitable tendency to select for preservation unnatural numbers of variant specimens, or, if such specimens are selected, some method should be developed for marking them so that they do not pass as normal members of their respective populations. Such considerations show the hopelessness of the old-fashioned synoptic collection with its two, six, or other definite number of specimens of each form. Species may, with considerable inadequacy, be so exhibited, but subspecies hardly at all.

As noted above, the present suggestion is that we return to the species as our basic biological units, and leave the subspecies for differentiation in fine print for recognition by those who happen to have adequate material. Moreover, since only a single subspecies by definition occurs in a single geographical region, a specific determination is sufficient for ecological purposes.

A Note on the Swarming of Stelopolybia pallipes var. anceps de Sauss.

Early in 1946 I received specimens of this social wasp, *Stelopolybia pallipes* var. *anceps*, belonging to the Polybiinae, from Mr. H. L. Parker, with his notation that they were migrating along the Tiete River at Itaquaquecetuba (Sao Paulo), Brazil, on Jan. 18, 1946. "They were migrating in large swarm for about twenty minutes, going East at 8 A.M. The day was clear with no wind."

The specimens were kindly identified by Dr. Joseph Bequaert, who states that all were females, and recalls that R. von Ihering found that swarms of members of this group do not contain males, and further that there is no differentiated worker caste.

PHIL RAU.

A New Species of Hydrobaenus (Chaetocladius) from Connecticut with Notes on related Forms. (Diptera, Chironomidae)

By O. A. Johannsen, Ithaca, N. Y.

A small collection of midges submitted to me for determination by Dr. S. W. Bromley contained two species closely resembling each other. One of these, *Diplocladius cultriger* Kieffer, first described from Europe, was recorded by me from New York about ten years ago on the basis of two reared specimens. The other could not be identified with any described species and therefore is herewith described as new. Although resembling each other in color, size, and other superficial features, *D. cultriger* differs in having short, but densely pubescent eyes, squama without a fringe of hairs, the hypopygium of the male with dististyles doubled and the basal lobe on the inner side of the basistyles long and free. All the specimens of both species were collected on a warm late afternoon in March as they were swarming over a stony, springy area in the young oak woods about 100 yards north of the laboratory of the Bartlett Tree Expert Co. in North Stamford.

The generic name Hydrobaenus adopted here was first used for a small European midge that recently has been considered by the late Dr. F. W. Edwards of the British Museum as congeneric with *Orthocladius* Van der Wulp and *Spaniotoma* Philippi. Since the term *Hydrobaenus* was proposed many years before either of the others it takes precedence.

Hydrobaenus (Chaetocladius) stamfordi n. sp.

Male. Black, including mouth parts, palpi, antennae, legs, and hypopygium; the narrow margins of the prescutellar space, a narrow longitudinal line in this space, and between the scutel vittae, the humeri, and very narrow incisions of the abdomen, more or less pollinose, most conspicuous when viewed obliquely. Halteres gray to blackish. Wings hyaline, veins brownish.

Eyes bare; palpi four-segmented; antennal ratio 2.0 to 2.2, no long hairs at apex of terminal segment, a few curved preapical sense bristles. Pronotal median incision present. Wings with microtrichia, visible under magnification of 400 to 500 diameters. Costa only slightly produced, first branch of the radius ends at the level of the tip of the second branch of the cubitus, second branch of the radius ends beyond the middistance between the tips of the first and third branches, media ends slightly behind the wing tip, r-m crossvein somewhat oblique, cubital fork slightly proximad of the crossvein, anal vein produced far beyond the level of the cubital fork. Lobe of wing large and right angled, the cilia ending slightly distad of the middle of the mesal margin of the lobe. Squama fringed. Hypopygium (Figure 1) with the distal margin of the very prominent inner lobe of the basistyle more or less at right angles to the longitudinal axis; anal point bare, slender, about half as long as the dististyle. Ratio of fore basitarsus to the tibia 0.65–0.7; fore tarsi not bearded; empodium well developed, nearly as long as the claws. Length 3.5 mm., wing 3.2 mm.

Female. Similar to the male in coloring. Antennae seven segmented, seventh segment slightly less than twice the sixth in length; sense bristles more than a half longer than the diameter of the segment (Figure 2); one whorl of long bristles on each flagellar segment except the last, seventh segment with eight to ten sense bristles, other segments with fewer. Wing venation as with the male; the radius and its branches (except the second) with a row of small, regularly but sparsely placed bristles. Halteres pale gray. Length 2.5 mm., wing 3 mm.

North Stamford, CONNECTICUT. March 1945. Dr. S. W. Bromley, collector. Holotype, allotype, and paratypes in the Cornell University collection; two paratypes in the collection of the U. S. National Museum.

This species resembles the European *H. pigra* Goetghebuer but differs in the antennal ratio of the male and in having a larger and differently formed inner lobe of the basistyle of the hypopygium. The North American species most nearly resembling it have in common the following characters in the male.

Black, usually without yellow markings; unmarked wings; posterior branch of radius extending beyond the level of tip of anterior branch of the cubitus; r-m crossvein slightly oblique; anal vein ending far beyond the level of the cubital fork; fore leg ratio exceeding 0.6; fore tarsi not bearded; a well developed empodium. The males of species recorded from the eastern states most nearly resembling *H. stamfordi* may be distinguished by the characters given below.

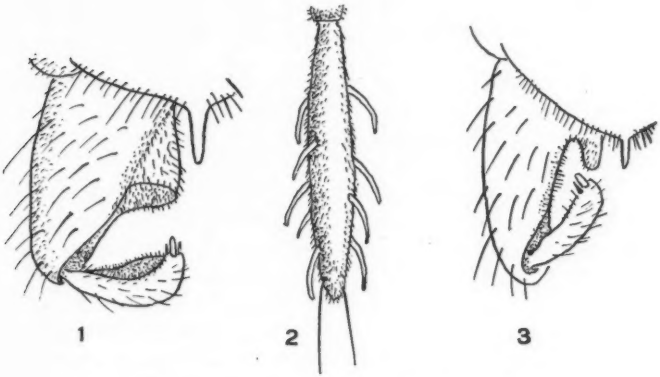


Fig. 1. *Hydrobaenus stamfordi,* hypopygium of male.
Fig. 2. *H. stamfordi,* seventh antennal segment of female.
Fig. 3. *H. nivoriundus,* hypopygium of male.

1. Anal point of tergite of hypopygium sparsely long haired.. (2)
   Anal point bare; wings with microtrichia visible under a magnification of 500 diameters..... (4)
2. Halteres dark; fore leg ratio 0.8; inner lobe of basistyle slender, rounded apically.....*nigritus* (Mall.)
   Halteres pale; leg ratio 0.75 or less..... (3)
3. Pronotum and humeri yellow; wings whitish; leg ratio 0.75; length 2.5 mm.....*lacteipennis* (Mall.)
   Thorax of male dark (of female with yellow between the thoracic vittae); halteres yellow; antennal ratio 2; leg ratio 0.7 to .73; inner lobe of basistyle resembling that of *H. nivoriundus* but broader at base (as shown in Figure 5a, Edwards, 1929, Trans. Ent. Soc. London, page 329);

anal point of last tergite more than half as long as the distyle; length 3 mm.....*obumratus* (Joh.)

4. Anal point of hypopygium small and slender (Figure 3), inner lobe of basistyle thumblike; antennal ratio 2.5; leg ratio 0.75–0.8.....*nivoriundus* (Joh.)

Anal point about half as long as dististyle, inner lobe of basistyle very prominent (Figure 1); antennal ratio 2–2.2; leg ratio 0.65–0.7.....*stamfordi* n. sp.

Rhodesiella: A Genus New to the Western Hemisphere (Diptera: Chloropidae)

By Curtis W. Sabrosky, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, United States Department of Agriculture

The genus *Rhodesiella* Adams (= *Macrostyla* Lioy preoccupied, *Meroscinis* De Meijere, *Aspistyla* Duda) is a large and common genus that ranges widely in a number of species throughout Ethiopian and Indo-Australian regions. To date, however, no specimens properly referable to this genus have been recorded from the Western Hemisphere. The South American species that have been so identified belong to a different genus. It is therefore of interest to record the occurrence in southeastern United States of a characteristic species of true *Rhodesiella* and to correct the South American records.

When the first specimens were found, in material collected at Orlando, Fla., it was thought possible that it was a species introduced from Africa. Later, two specimens of the same species were collected at Raleigh, N. C., by C. S. Brimley. Detailed comparison with African species shows that the American specimens represent an undescribed form.

Rhodesiella brimleyi, new species

Male, female. Shining black, only the antenna (except for the infuscated apex of the third segment), stalk of the halter, knees narrowly, distal fourth to third of all tibiae, and all tarsi, yellow; fore tibiae paler than the others and not so distinctly

marked; tarsi with a slight suggestion of brown on the distal segment; frontal triangle typically dark bluish black, occasionally without the bluish shine but those specimens in poor condition; all hairs and bristles black.

Head of typical *Rhodesiella* habitus, with bare eyes, linear cheeks, relatively small antennae, unusually long aristae (one and one-half times as long as the front), and long orbital and interfrontal hairs; frontal triangle long, attaining the anterior margin of the front, the apex acute; epistomal margin slightly produced, in profile the vibrissal angle distinct, approximately a 90° angle.

Mesonotum relatively short and broad, its length and width subequal; scutellum large, its length nearly one and one-fourth times its basal width, and two-thirds as long as the mesonotum; one pair of long strong apical and one pair of short subapical scutellar bristles, all set on stout enlarged bases.

Legs slender, the hind femur only slightly enlarged and with no spines or denticles on the ventral surface; no "sensory area" on the posterodorsal surface of the hind tibia.

Wing venation virtually the same as figured for *Macrostyla plumigera* (Meigen) by Duda (1933, Chloropidae, *in* Lindner, Fliegen Palaeark. Region, Lfg. 72, pl. 1, fig. 2), the ultimate section of the fourth vein at its base bent forward slightly more than in *plumigera;* length of costal sectors 2 to 4 as 21:28:12; small cross vein approximately opposite the middle of the discal cell.

Length, 2 mm.

Holotype: ♀, Raleigh, NORTH CAROLINA, October 21 (C. S. Brimley). Type No. 58383 in the United States National Museum, deposited through the courtesy of the North Carolina Department of Agriculture. *Paratypes:* 1 ♀, Raleigh, N. C., June 9, 1942 (C. S. Brimley) [N. C. Dept. Agr. Collection]; 15 (10 ♂, 5 ♀), Orlando, FLORIDA, November 16, 1937, "from cage over pile of grass in corner of grove" (J. T. Bigham) [U. S. Natl. Mus.].

The species is named in honor of the late C. S. Brimley, versatile naturalist and keen observer.

Rhodesiella brimleyi belongs to the *tarsalis* group (cf. Malloch, 1931, Ann. and Mag. Nat. Hist., Ser. 10, 8: 49–69) and is very close to *R. nigrifrons* Malloch, described from Southern Rhodesia. The latter is distinguished by having the first and second antennal segments black, apex of the frontal triangle truncate (though not as broadly so as in *tarsalis*), vibrissal angle weak and scarcely evident, and scutellum shorter than in *brimleyi*, its length subequal to its basal width and slightly less than half the length of the mesonotum, appearing more broadly rounded apically.

Becker (1912, Ann. Mus. Nat. Hungarici 10: 129, 177), in his monograph of the neotropical Chloropidae, placed *Onychaspidium* Enderlein (type, *O. sexdentatum* End., from southern Brazil) in synonymy under *Meroscinis*. In a more recent revision of the neotropical species of the family, Duda (1930, Folia Zool. Hydrobiol., Riga 2: 82–83) accepted this synonymy, referred several other species to the group, and gave a key to six neotropical species of *Meroscinis*. Included among them is *longiscutellatus* Enderlein, the genotype of *Leptopeltastes* End., which had been made a synonym of *Gaurax* by Becker (op. cit., p. 199) but which Duda thus refers to *Meroscinis*.

In my opinion, the neotropical species form a group quite distinct from the genus *Rhodesiella*. I therefore propose to resurrect *Onychaspidium* Enderlein, and I agree with Duda that *Leptopeltastes* is a synonym. The synonymy will be as follows:

Onychaspidium Enderlein, 1911, Gesell. f. Naturf. Freunde Sitzber., Jahrgang 1911, No. 4, p. 196. Type, *O. sexdentatum* Enderlein.
= *Meroscinis* De Meijere of Becker (1912) and Duda (1930), for the Neotropical Region.
= *Leptopeltastes* Enderlein, 1911, l. c., p. 229. Type, *L. longiscutellata* Enderlein.

The major generic characters are the following:

Onychaspidium: Ocellar bristles short and weak, cruciate at the tips; eyes densely short pubescent; notopleural bristles 1 + 2; scutellum relatively small, thin and flattened, *Elachiptera*-like; mesopleuron without hairs; "sensory area" on the posterodorsal surface of the hind tibia large and conspicuous.

Rhodesiella: Ocellar bristles well developed, strongly divergent; eyes bare; notopleural bristles 1 + 1; scutellum large and conspicuous, not strongly flattened; mesopleuron with numerous long hairs; "sensory area" on the hind tibia minute or absent.

It may also be noted that *Meroscinis quadridentata* Duda (1930, l. c., p. 83) from Brazil is a synonym of *Onychaspidium apicale* (Williston) (*Oscinis apicalis* Will.) [new synonymy]. I have seen the types of both and have found Duda erred in believing *apicale* to be a species with only two apical scutellar tubercles, thus redescribing it as *quadridentata.* The type of the latter is a female, Petropolis, Brazil, November 11, 1924 (Borgmeier), now in the collection of the Instituto Biologico in Sao Paulo, and recently loaned for study through the courtesy of Oscar Monte. A series of 14 specimens, Farm La Caja, Costa Rica, were labeled as types of *M. quadridentata* in the Zoologisches Museum in Hamburg, Germany, but since only Brazil was originally mentioned by Duda (1930), these specimens cannot be considered part of the type series.

New Elateridae with Notes on Eucnemidae (Coleoptera)

By J. N. KNULL,[1] Ohio State University

Limonius meridianus n. sp.

Male. Form, size and color of *L. stigma* (Hbst.); black, head and pronotum with slight bronze luster, base of elytra and humeral angles reddish brown, tarsi light brown, both surfaces moderately pubescent.

Head with front somewhat depressed above clypeus, clypeal margin broadly arcuate; surface coarsely, densely punctured; antennae extending less than one segment beyond hind margins of pronotum when laid along side; scape stout, finely, densely punctate; second and third segments about equal in length, each longer than wide, together slightly longer than fourth; segments four to ten inclusive longer than wide, serrate; eleventh oval

[1] Contribution from Department of Zoology and Entomology.

Pronotum longer than wide, narrower at apex than at base; sides broadly rounded in front, sinuate behind middle, hind angles obliquely truncate; disk convex, depressed in front of scutellum, hind angles strongly carinate, surface coarsely, densely punctured, punctures in middle separated by less than their own diameters. Scutellum finely, densely punctate, pubescent.

Elytra with sides subparallel, broadly rounded in apical third to suture; disk convex; surface with striae coarsely punctured, punctures decreasing in size toward apex, separated by less than their own diameters, interspaces convex, densely, finely punctate.

Prosternal sutures grooved in front. Abdomen beneath densely, finely punctate.

Length 8.5 mm.; width 2.4 mm.

Female. Antennae extending over one and a half segments beyond middle of pronotum.

Holotype: ♂, labeled Old Man's Cave, Hocking Co., OHIO, May 17, 1936; *allotype,* Clifton Gorge, Ohio, May 30; *paratype* from Clifton, Ohio, June 4, 1940, all collected by D. J. & J. N. Knull and in collection of author.

Paratypes in H. W. Wenzel collection, Ohio State University from Charleroi, Pa., Ehrman and Cranberry, N. C., June 9–19, H. W. Wenzel.

This species would run to *A. crotchi* Horn in Van Dyke's key,[2] however punctures of pronotum are not as coarse in the new species. It has been confused with *L. stigma* (Hbst.) in our collection. The grooved prosternal sutures will separate it.

Limonius pubicollis Lec.

Trans. Amer. Philos. Soc., 1853: 429.

This species appears in Leng's list as a synonym of *L. auripilis* (Say) from which it differs as follows: reddish brown area at base of elytra more evident, lacking in some *auripilis;* dorsal surface less shining; legs darker, same color as ventral surface; light brown and lighter than ventral surface in *auripilis.* Clypeus less deeply emarginate, forming a more obtuse angle along

[2] E. C. Van Dyke, 1932, Proc. Calif. Acad. Sci., vol. 20: 334.

margin. Elytral intervals more densely punctate, punctures narrowly separated, giving elytra an opaque appearance.

Specimens examined are from South Carolina, Georgia, Florida, Texas and Oklahoma.

Mr. John Wilcox kindly compared specimens with the LeConte type for me.

Limonius olentangyi n. sp.

Female. Short, rather robust; shining, black, outer margin of elytra and legs dark brown; pubescence conspicuous especially on dorsal surface.

Head with front coarsely, densely punctured; clypeal margin broadly arcuate; antennae not extending to hind angles of pronotum when laid along side, scape stout, second and third segments of equal length, short, together slightly longer than fourth, segments four to ten inclusive longer than wide, serrate, eleventh longest.

Pronotum longer than wide, widest back of middle, wider at base than at apex; sides broadly rounded in front, sinuate at base, side margin visible for its entire length from above; hind angles obliquely truncate; disk convex, median depression in front of scutellum, carinae of hind angles faint; surface finely punctate, punctures separated by more than their own diameters in middle, dense at sides. Scutellum densely finely punctate and pubescent.

Elytra with sides subparallel, broadly rounded in apical third to suture; disk flattened in middle; surface striate, punctures small, well separated, interspaces finely, triseriately punctate.

Prosternal sutures grooved in front. Abdomen beneath finely, densely punctate.

Length 8.7 mm.; width 2.7 mm.

Holotype: ♀, collected in Delaware Co., OHIO, May 30, 1945 by D. J. & J. N. Knull, in collection of author.

This species would run to *L. confusus* Lec. in Van Dyke's key. It can be distinguished by its black color, short, more robust form, wider and less convex finely punctate pronotum.

Ludius robinsoni n. sp.

Male. Superficially resembling *L. bivittatus* (Melsh.) in size, form and color. Color dark brown, apex and base of pronotum, base of elytra and wide stripe down each elytron, yellowish brown; legs lighter than ventral surface; moderately pubescent.

Head densely coarsely punctured; antennae extending over three segments beyond hind angles of pronotum, second segment shorter than third, fourth longer than third, segments four to ten inclusive gradually lengthening, eleventh longest.

Pronotum much longer than wide, widest at base, constricted at apex; sides broadly rounded in front, divergent posteriorly, hind angles prolonged, angles obtuse; disk convex, a slight depression each side at base, hind angles faintly carinate; surface densely, coarsely punctured. Scutellum with sides subparallel, broadly rounded posteriorly.

Elytra with sides, subparallel, broadly rounded posteriorly, apices rounded; disk convex; surface with rows of coarse, closely placed punctures, diminishing in size toward apex, interspaces convex, minutely punctured.

Abdomen beneath, densely, finely punctate.

Length 9 mm.; width, 2.3 mm.

Holotype: ♂, labeled Dallas Co., TEXAS, May 11, 1934, J. Robinson collector. *Paratypes* same locality May 10–16.

This species is evidently confused with *L. bivittatus* (Melsh.) in collections. It differs by being slightly shorter, pronotum in greater part dark, lacking median and lateral light stripe; hind angles less divergent, angles more obtuse, side margin not so well marked, and third segment of antenna being considerably shorter than fourth.

It would run to *L. bivittatus* (Melsh.) in Van Dyke's key.[3]

Isorhipis ruficornis (Say)

Larvae were found in sapwood of a barked, partly decayed sugar maple (*Acer saccharum* Marsh.) log in Delaware Co., Ohio, March 2. Adults were ready to emerge April 19.

[3] E. C. Van Dyke, 1932, Proc. Calif. Acad. Sci., vol. 20: 390.

Deltometopus amoenicornis (Say) and **rufipes** (Melsh.)

Reared from badly decayed American beech (*Fagus grandifolia* Ehrh.) log from Delaware Co., Ohio. The species overwinters in larval stage.

Dirhagus pectinatus (Lec.)

Reared from badly decayed American beech log from Delaware Co., Ohio.

Nematodes penetrans (Lec.)

Reared from fallen limb of American beech from Delaware Co., Ohio. Adults are capable of snapping into the air.

A New Species of Taphrocerus (Coleoptera: Buprestidae)

By Burdette E. White, Merced, California

While sweeping a meadow of rushes in northwestern Merced County on April 18, 1946, this writer collected a single female specimen of *Taphrocerus*. Considerable effort failed to reveal any additional specimens at this time. After reviewing Professor Knull's paper on the *Taphrocerus* * it became apparent that this specimen belonged to an undescribed species. However, a male was necessary to establish this with certainty. Another trip to the area on April 22, 1946, yielded two more examples, one being a male, whose genitalia proved conclusively that here indeed was a new form. Two more females were collected on April 27 but three trips shortly thereafter produced no additional specimens, so it seemed that this was an early season form. With only five examples in hand, but with the prospect of obtaining additional material the following year, it appeared desirable to postpone publication of this find.

Two trips to the same area in early spring (March 23, April 1) of 1947 yielded nothing. However, on April 12, a series of

* Knull, J. N.—The Ohio Journal of Science, 1944, Vol. XLIV, 2. 90–93.

fourteen specimens was collected after two hours of vigorous sweeping. Ten additional examples were obtained the next day and two more on April 19. These records plainly indicate the seasonal range of this species.

Although there has been dubious reference to the existence of *Taphrocerus* in California, the writer believes that these specimens represent the first authentic record of that fact.

Taphrocerus mercedensis, new species

Male: Shining black throughout; three times as long as wide, pronotum at basal angles distinctly wider than elytra; surface sparsely, feebly pubescent without tendency to form concentrated patches; elytral apices smooth along the margin.

Head convex, front feebly concave vertically due to slight median depression; surface finely alutaceous with large, shallow punctures separated by a distance equal to their own diameters on the vertex; punctures more sparse on the front between upper two-thirds of eyes; front at lower third of eyes more densely punctate and noticeably more pubescent than upper head surface; each puncture normally with a short, appressed hair; front between lower third of eye slightly depressed.

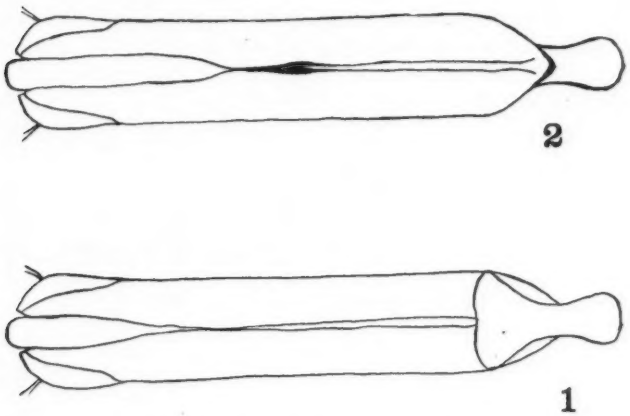
Pronotum two times as wide as long, widest at basal angles, gradually narrowing to apex to become equal to width of head; depressed across basal third; surface finely alutaceous with large, shallow punctures moderately dense over basal depression, along sides and across apex; punctures widely separated on disc; each puncture with a fine, short, appressed white hair. Scutellum triangular, glabrous, impunctate.

Elytra narrower than base of pronotum, sides constricted at basal third narrowly exposing abdominal sclerites along middle third; gradually narrowing from middle to near apex, then sharply rounded to suture; apices even (not serrulate); surface rather strongly alutaceous but shining; with coarse punctures arranged in rows and becoming less coarse posteriorly; the margin of each puncture somewhat rugose; each puncture normally with an appressed short, white hair.

Ventral surface alutaceous, shining; with large, shallow punctures; punctures with an appressed white hair.

Length 3.35 mm., width 1.25 mm.

Female: Differs from male by having the front area between lower third of eyes very much less pubescent. Strikingly similar in all other aspects.



Male genitalia of *Taphroccrus mercedensis.*

1. Ventral view. 2. Dorsal view.

Holotype male and *allotype* collected two miles east of Cressey, Merced County, CALIFORNIA on April 12, 1947 by Burdette E. White. Twenty-nine paratypes (thirteen males and sixteen females) collected at the same locality (dates cited above).

All specimens were swept from an association of *Juncus balticus* Willd. and *Carex densa* Bailey (determined by the author); the majority of the beetles were from the latter plant but there is no positive evidence that either is the true host.

Holotype, allotype, and paratypes are in writer's collection. Paratypes are deposited in the following collections: J. N. Knull; California Academy of Sciences; American Museum of Natural History; U. S. National Museum; J. J. du Bois; Acad-

emy of Natural Sciences at Philadelphia; Museum of Comparative Zoology at Cambridge; C. A. Frost; and William Barr.

Taphrocerus mercedensis is readily separable from all other species by the distinctive male genitalia (see accompanying figures). However, it is also quite unique in its smooth elytral apices, its broader thoracic base, and its general form. It is the size of *T. huachucanus* Knull but its form and color as well as its vestiture and male genitalia are quite different. The male genitalia are most similar to *T. howardi* Obenb.

So far as the writer is aware, *mercedensis* is found only in the San Joaquin Valley of California and its present recorded range is extremely narrow. However, later surveys may show its existence over a much wider area.

New Skipper Records for the United States

By H. A. Freeman, Pharr, Texas

After three years of collecting in the Rio Grande Valley of Texas the writer has come to the conclusion that many of the species of butterflies that occur in the vicinity of Victoria, Tamps., Mexico, will eventually be found to stray up around Pharr, Texas. Many of these species have been found to be native to this area, while others occur here only as stragglers. During 1944–45 the beautiful species, *Astraptes fulgerator* Walsh, was found to be very common and it was not unusual for the author to go out and collect as many as thirty or forty specimens in one afternoon. During the past year the writer has been unable to get more than two specimens. The past twelve months have been very dry here and this may account partially for the scarcity of that species. During 1946 over a hundred specimens of *Lerodea tyrtaeus* Ploetz were collected, thus establishing the fact that this species is very definitely native to this part of the state. Some of the other species of skippers that have been recorded from down here have failed to show up since the single specimen of each was caught. Examples of such

stragglers are *Astraptes hopfferi* (Ploetz), *Astraptes anaphus* (Cramer), *Pellicia bromias* G. & S., and *Celaenorrhinus fritzgaertneri* (Bailey). Two of these species are very powerful flyers and could have very easily flown up from Mexico, namely *hopfferi* (Ploetz) and *anaphus* (Cramer), whereas, although the other two are swift of wing, it is more likely that they emerged from their chrysalides somewhere in this area as the specimens were very fresh when collected. Possibly, later studies of this part of Texas will result in the finding of more specimens of all four species.

Aguna asander form **panthius** (H.-S.)

This form differs from typical *asander* (Hew.) in the following way: *Asander* has a well defined silver stripe on the lower surface of the secondaries, extending from the costal margin nearly to the bottom of the wing; form *panthius* has this stripe reduced to a very narrow gray band and the silver is heavily overscaled with purplish-gray scales. Mr. E. L. Bell informed the writer that this form occurred wherever the typical species was found.

In the examination of some insects collected by members of the writer's class in entomology at the Pharr-San Juan-Alamo High School, a fresh male specimen of this form was found. It was collected by Richard T. Hall and Belva Jean Norman, October 21, 1946, at Pharr, Texas. This is the first record of this form having been collected in the United States.

Pellicia costimacula H.-S.

This species resembles *Pellicia bromias* G. & S. in some respects but can be distinguished at once by the absence of subapical spots. It is somewhat smaller than *bromias* and slightly darker.

The writer caught a fresh male specimen of this species ten miles south of Pharr, Texas, November 28, 1946. This is the first record of this species having been caught in the United States.

Gorgythion begga pyralina (Moschler)

There has been considerable confusion centered around the exact status of *begga* (Prittw.) and *pyralina* (Mschlr.). Some authors consider the two to be specifically distinct, whereas others consider *pyralina* to be a form of *begga*. In its extreme southern range, Central America to southern Brazil, *pyralina* does occur as a form of *begga*, whereas in its more northern range, northern Mexico, *pyralina* takes on a subspecific status as all of the specimens that the writer has seen from that part of Mexico lack the decided white area around the anal angle on the lower surface of the secondaries that characterizes *begga*.

While collecting with Dr. C. D. Michener, of the American Museum of Natural History, twelve miles south of Pharr, Texas, the writer caught a female specimen of *pyralina*, on March 31, 1946. This is the first recorded evidence of the genus *Gorgythion* occurring in the United States.

To sum up the seventeen new skippers recorded for the United States published by the writer, the following two divisions are made:

Species that are native to the Rio Grande Valley of Texas:

Astraptes fulgerator (Welsh) *
Spathilepia clonius (Cram.)
Carrhenes canescens (Feld.)
Lerodea tyrtaeus Ploetz
Lerodea edata (Ploetz)
Synapte malitiosa (H.-S.)

Species that are strays or else poorly established in the Rio Grande Valley of Texas:

Urbanus doryssus (Swains.)
Urbanus auginus auginulus (G. & S.)
Aguna asander (Hew.)
Aguna asander form *panthius* (H.-S.)
Astraptes anaphus (Cram.)
Astraptes hopfferi (Ploetz)
Pellicia bromias G. & S.
Pellicia costimacula H.-S.
Celaenorrhinus fritzgaertneri (Bailey)
Gorgythion begga pyralina (Mschlr.)
Perichares phocion dolores (Reak.)

*First recorded by W. D. Field, Jour. of the Kansas Ent. Soc., vol. 13: April 1940; no. 2, page 57.

Current Entomological Literature

COMPILED BY EDWIN T. MOUL, RAYMOND Q. BLISS, CHARLES HODGE IV, MAURICE E. PHILLIPS, JOHN W. H. REHN AND HENRY K. TOWNES, JR.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia and the University of Pennsylvania, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or preceding year unless otherwise noted. Continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

NOTE: The figures within brackets [ ] refer to the journal in which the paper appeared, as numbered in the List of periodicals and serials published in our January and June issues. The number of the volume, and in some cases, the part, heft, &c. is followed by a colon (:). References to papers containing new forms or names not so stated in titles are followed by (*); if containing keys are followed by (k); papers pertaining exclusively to Neotropical species, and not so indicated in the title, have the symbol (S).

Papers published in ENTOMOLOGICAL NEWS are not listed.

GENERAL—Amaral, A. do—Nota sôbre nomenclatura zoológica. [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 181–94. **Light and Weesner**—Methods for culturing termites. [80] 106: 131–32. **Tafall, F. O.**—Anotaciones sobre algunos aspectos de la hidrologia Mexicana. [79] 7: 139–65. **Ward, Ivor Jesmond**—(Obituary of). [23] 79: 39.

ANATOMY, PHYSIOLOGY, MEDICAL—Anschau, M.—Über das Verhalten der Larven von Hydrobius fuscipes bei der Nahrungsaufnahme. [Öesterreichische Zool. Zeitschr.] 1: 165–69, ill. **Beebe, W.**—Notes on the hercules beetle, Dynastes hercules at Rancho Grande, Venezuela, with special reference to combat behavior. [95] 32: 109–16, ill. **Bettini, S.**—Sul contenuto proteico di riserva dei corpi grassi delle femmine di Anopheles labranchiae var. atroparvus. [Riv. di Parassit.] 8: 45–52, ill. **Birch, L. C.**—Ability of flour beetles to breed in wheat. [26] 28: 322–24. **Burke, F.**—Studying mosquitoes. I. [51] 6: 212–18. **Davidheiser, B.**—Observations on the inheritance of sex in Sciara ocellaris. [58] 47: 89–102. **DeBach and Smith**—Effects of parasite population density on rate of change of host and parasite populations. [26] 28: 290–98. **Dethier, V. G.**—The response of hymenopterous parasites to chemical stimulation of the ovipositor. [41] 105: 199–208, ill. **Dobzhansky, Th.**—A directional change in the genetic constitution of a natural population of Drosophila pseudo-

obscura. [Heredity, London and Edinburgh] 1: 19–52. **Dobzhansky and Wright**—Genetics of natural populations. XV. Rate of diffusion of a mutant gene through a population of Drosophila pseudoobscura. [Genetics] 32: 303–24. **Dolley and Golden**—The effect of sex and age on the temperature at which reversal in reaction to light in Eristalis tenax occurs. [12] 92: 178–86. **Dubinin and Tiniakov**—Natural selection in experiments with population inversions. [Jour. Genetics, London] 48: 11–15. **Feldman-Muhsam, B.**—Resistance of larvae and nymphs of Hyalomma savignyi to various conditions of temperature and humidity. [61] 38: 111–15. **Flanders, S. E.**—Elements of host discovery exemplified by parasitic Hymenoptera. [26] 28: 299–309. **Fraenkel and Bluett**—The effect of linoleic acid and arachidonic acid on the development of the flour moth, Ephestia kühniella. [Biochem. Jour.] 41 (2): xvii. **Freeman, T. N.**—The external anatomy of the spruce budworm, Choristoneura fumiferana (Tortri.). [23] 79: 21–31, ill. **Frisch, K. v.**—Die Tänze der Bienen. [Österreichische Zool. Zeitschr.] 1: 1–48, ill. **Goetsch, W.**—Vitamin "T", ein neuartiger Wirkstoff. [Österreichische Zool. Zeitschr.] 1: 49–57, ill.; Darm-Symbionten als Eiweissquelle und Vitaminspender. Ibid.: 58–86, ill.; Der Einfluss von Vitamin T auf Gestalt und auf Gewohnheiten von Insekten. Ibid.: 193–274, ill. **Herms, W. B.**—Some problems in the use of artificial light in crop protection. [Hilgardia] 17: 359–75, ill. **Knowlton, G. F.**—Boxelder bug "bites" man (Corerd.). [18] 42: 33. **Kupka, E.**—Über Bremsvorrichtungen an den Laufbeinen der Blattodea. [Oesterreichische Zool. Zeitschr.] 1: 170–75, ill. **Lawrence, R. F.**—Some observations on the post-embryonic development of the Natal forest centipede, Cormocephalus multispinus. [Ann. Natal Mus.] 11: 139–56, ill. **Michelmore, A. P. G.**—A popular misconception regarding humidity and the need for closer liaison between meteorologists. [Jour. Ecology] 34: 107–10. **Patterson, J. T.**—Studies in the genetics of Drosophila. V. Isolating mechanisms. [Univ. of Texas Publication, Austin] No. 4720: 1–184. **Salt and James**—Low temperature as a factor in the mortality of eggs of Mantis religiosa. [23] 79: 33–36. **Schaerffenberg, B.**—Poikilosmotische Landtiere. [Österreichische Zool. Zeitschr.] 1: 176–78. **Scott, T. L.**—Bee anatomy. Internal. Sect. 4. [51] 6: 217–21. **Sein and Adusar**—Transmission of the bunchy top disease of papaya (Carica papaya) by the leaf hopper

Empoasa papayae. [80] 106: 130. **Simmonds, F. J.**—The biology of Phytodietus pulcherrimus (Ichneumonid) parasitic on Loxostege sticticalis in N. America. [61] 38: 150–56, ill. **Tiegs, O. W.**—The development and affinities of the Pauropoda, based on a study of Pauropus silvaticus. [74] 88: 165–267. **Warren, E.**—On the genital system and gut of the oribatid mite, Cephus tegeocranus, and the reaction of these organs to a ray-fungus parasite. [Ann. Natal Mus.] 11: 1–36, ill. **Wene, G.**—An effect of sublethal doses of cryolite on Mexican bean beetle larvae, Epilachna varivestis. [58] 47: 117–18. **Whiting, P. W.**—Some experiments with Melittobia and other wasps (Chalcid., Scelionid). [42] 38: 11–20.

ARACHNIDA AND MYRIOPODA—Chamberlin, R. V.—Two new species of Trichomorpha from Panama. [63] 60: 63–65, ill. **Feldman-Muhsam, B.**—(See under Anatomy.) **Lawrence, R. F.**—(See under Anatomy.) **Soares e Soares**—Contribuição ao Estudo das aranhas do Espírito Santo (Arachnida). [Papéis Avulsos Dept. Zool. Sec. Agr., S. Paulo] 7: 51–72, ill.; Um novo conceito do gênero Ilhaia (Opiliones, Gonyleptidae). *Ibid.:* 73–78; Novos opiliões de Banhado (Estado do Paraná). *Ibid.:* 101–12; Novos opiliões do Estado do Espírito Santo e um novo opilião do Estado do Pará. *Ibid.:* 195–212; Um novo opilião do Estado de São Paulo (Opiliones, Gonyleptidae). *Ibid.:* 213–16, ill.; Uma nova espécie de Camarana e alótipo de Eusarcus montis (Opil., Gonylep.). *Ibid.:* 221–26; Um novo gênero e duas novas espécies de opilões (Opil., Cosmetid., Gonylep.). *Ibid.:* 227–32, ill.; Novos opilões do Estado do Espírito Santo coligidos na fazenda Chaves (Opil., Gonylep.). *Ibid.:* 233–42, ill. **Soares, H. E. M.**—Um novo Tomisida brasileiro (Araneae, Thomisidae). [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 267–70, ill. **Tiegs, O. W.**—(See under Anatomy.) **Warren, E.**—See under Anatomy.).

SMALLER ORDERS—Bonet, F.—Mas hipogastrúridos anoftalmos de Mexico (Collembola). [79] 7: 51–62, ill. (k*). **Cesare, C.**—Il genere Paradoxuroecus ea il suo genero-tipo (Mallophaga). [111] 7: 247–49, ill. **Light and Weesner**—(See under General). **Santos, N. D. dos**—Microthyria borgmeierei n. sp. (Libellulid). [111] 7: 215–18. **Walker, J. D.**—List of the Stoneflies (Plecoptera) known to occur in s.e. Ohio. [58] 47: 134–36. **Westfall, M. J., Jr.**—A new Macromia from North Carolina. [38] 63: 32–36.

ORTHOPTERA—Kupka, E.—(See under Anatomy.) **Liebermann, José**—Sôbre una collección de Acridoideos Brasileños del Instituto Oswaldo Cruz. [111] 7: 165–71. **Salt and James**—(See under Anatomy.).

HEMIPTERA—Carvahlo, J. C. M.—Dois gêneros de Isometopidae da fauna neotrópica. [111] 7: 255–60, ill. **DeLong and Hershberger**—The genus Exitianus in N. America incl. Mexico (Cicadellid). [58] 47: 107–16. **Esselbaugh, C. O.**—Some notes on the biology of Hymenarcys aequalis (Pentatom.). [18] 42: 25–30. **Knowlton, G. F.**—(See under Anatomy.) **Seín and Adusar**—(See under Anatomy.)

LEPIDOPTERA—Bohart, R. M.—Sod webworms and other lawn pests in California (Pyralid). [Hilgardia] 17: 267–308. **Clarke, J. F. G.**—New North American Species and new assignments in the genus Chionodes (Gelechiidae). [48] 37: 243–54 (ill.). **Fraenkel and Bluett**—(See under Anatomy.) **Freeman, T. N.**—A new generic assignment for Anchips fumiferana, the spruce budworm (Tortric.). [23] 79: 21. (See also under Anatomy.) **Hayward, K. J.**—Hesperiidae capturados em Pôrto Cabral duranta uma segunda excursão à margem paulista do Rio Paraná. [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 129–42. **Herms, W. B.**—(See under Anatomy.) **McDunnough, J.**—The agrotid genus Agrotiphila and its genotype. [23] 79: 38–39. **Travossos, L.**—Contribuiçaõ ao conhecimento dos Arctiidae. XII. Gênero Isia Walker 1856. [111] 7: 181–94, ill. **Travassos Filho, L.**—Notas de Nomenclatura. I. Estado atual dos gêneros Methysia e Metamya, novo nome para Paramya (Ctenuchid). [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 257–66. **Wind and Clench**—New Indo-Australian Lycaenidae. [18] 42: 1–16.

DIPTERA—Alexander, C. P.—New or little known Tipulidae from São Paulo, Brasil. [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 1–43, ill. **Alexander, C. P.**—New species of Ptychopteridae. III. [18] 42: 19–24. **Carrera, M.**—Duas novas espécies de Cyrtidae do Brasil. [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 79–86, ill.; Pequenas notas sôbre Asilidae. III. Redescrição de Dismeryngodes anticu e dercrição do alótipo de Othoniomyia triangularis (Laphriinae). *Ibid.*: 93–100, ill.; Sôbre algumas espécies do gênero Atoniomyia Hermann, 1912 (Asilid). *Ibid.*: 113–28, ill.; Sôbre o gênero Cerozodus (Asilid). *Ibid.*: 7: 247–56, ill. **Bettini, S.**—(See under Anatomy.)

Davidheiser, B.—(See under Anatomy.) **Dobzhansky, Th.**—(See under Anatomy.) **Dolley and Golden**—(See under Anatomy.) **Knight, K. L.**—A new species of Aedes (Christophersiomyia) from the Philippines. [63] 60: 73–76, ill. (k). **Michener, C. D.**—Mosquitoes of a limited area in southern Mississippi. [1] 37: 325–74. **Patterson, J. T.**—(See under Anatomy.) **Phillip, C. B.**—A catalogue of the blood-sucking fly family Tabanidae. [1] 37: 257–324. **Pritchard, A. E.**—North American gall midges of the tribe Micromyini; Itonididae (Cecidomyiid). [27] 27: 1–86 (k*). **Sacca, G.**—Revisione dei Phlebotomus della collezione Rondani: Un punto fermo sulla questione del P. minutus. [Riv. di Parassit.] 8: 53–62, ill. **Shewell, G. E.**—A male of Diachlorus ferrugatus (Taban.). [23] 79: 32. **Steyskal, G.**—Notes on the genus Dolichopus. Paper 3. [18] 42: 34–38. Diostracus prasinus in Tennessee (Dolichopod.). *Ibid.* p. 16.

COLEOPTERA—Anschau, M.—(See under Anatomy.) **Araujo, R. L.**—Notas sôbre o gênero Tiphaura e descrição de uma nova espécie (Curc., Erirrhin.). [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 87–92. **Barber, H. S.**—A new Schematiza on Cordia in Trinidad (Chrysomelidae). [48] 37: 242–43 (*). **Barr, W. F.**—A new sp. of Cymatodera from California and Oregon (Clerid). [18] 42: 17–18. **Birch, L. S.**—(See under Anatomy.) **Beebe, W.**—(See under Anatomy.) **Frost, C. A.**—Octhephilum fracticorne (Staph.). [18] 42: 18. **Lane, F.**—Sôbre os tipos e a sinonimia de alguns Canthonini (Scarab). [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 1: 171–79. **Navajas, E.**—Os genótipos de fam. Fulcidacidae (Chrysomel.). [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 243–45. **Parker, F. H.**—A new Paratyndaris from Arizona (Buprest.). [18] 42: 31–33. **Strand, H.**—Nordnorges Coleoptera. [Tromsø Mus. Årshefter, Naturhistorisk Avd. Nr. 34] 67 (1944) nr. 1: 1–629. **Wene, G.**—(See under Anatomy.).

HYMENOPTERA—Araujo, R. L.—Angiopolybia nom. n. para o conceito revalidado de Stelopolybia Ducke, 1914 (Vespidae). [Papéis Avulsos Dept. Zool. Secr. Agr., S. Paulo] 7: 165–70. **Dethier, V. G.**—See under Anatomy.) **Flanders, S. E.**—(See under Anatomy.) **Frisch, K. v.**—(See under Anatomy.) **Simmonds, F. J.**—(See under Anatomy.) **Smith, M. R.**—A generic and subgeneric synopsis of the United States ants, based on the workers. [1] 37: 521–647, ill. **Whiting, P. W.**—(See under Anatomy.).

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Wanted—Papers on Cicindelidae of any part of the world, especially South America and Pacific. R. G. Dahl, 3225 Grand Ave., Apt. 13, Oakland 10, Cal.

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